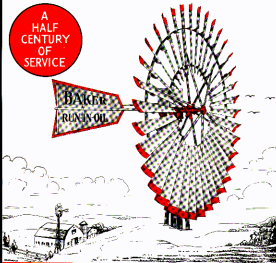


BAKER Run-in-Oil Windmill

A
HALF
CENTURY
OF
SERVICE

BAKER
RUN-IN-OIL



Most Economical Power
in the World

THE HELLER-ALLER CO., NAPOLEON, OHIO

Phantom View BACK GEARED ENGINE

Construction of this mill is the simplest of any on the market. Note that there is no mechanism above the oil-bowl. This is a distinctive feature of all Baker "Run-in-Oil" Mills. The Baker has positive oiling. All working parts are actually bathed in oil. All bearings are cored and die cast to insure perfect castings. Also drilled and reamed to make them positively smooth. Since all bearings are at all times flooded with oil, there will be practically no wear at these points. Each part is thoroughly inspected before leaving our factory.

Note extreme sturdiness of hub, bowl and vane casting. Every little detail enhances the simplicity and ruggedness of design. The working mechanism is entirely enclosed by means of a tight-fitting galvanized hood, which positively keeps all rain, dust, sleet and snow out of oil bowl.

The Baker Windmill is made in 5½-ft., 6½-ft., 8-ft., 10-ft., and 12-ft. sizes. Each size Baker Wind Engine is a duplicate and similar to the other sizes; as the wheel diameter increases, the mill is made proportionately heavier and larger.



Fig. 4.1A

Entire Mechanism

(Lifted from the Oil Bowl)

BACK GEARED ENGINE



Fig. 4.1B

to oil-bowl, the other end to the pump rod. Note the heavy construction throughout, and the Baker's ruggedness.

SIMPLICITY—The keynote of any successful engine is easily perceivable in the Baker. The only working parts are two drive gears, two pinions, rocker arm and pitman. The small pinions are keyed fast to the heavy polished shaft. These pinions drive the large gears each independently of the other. The use of double gears and pinions equally distribute the load so as to do away with undue stress and strain at any one concentrated point. Use of the rocker arm gives added leverage, which means more power. One end of rocker arm is made fast

Distinctive Features of the Back Geared Baker

1. WORKING PARTS ACTUALLY RUN IN OIL. There is no complicated oil pump or mechanism used to elevate the lubricant. The Baker has positive oiling. With each turn of the wheel, every working part is bathed in oil. There is no machinery overhead; all mechanism is within the oil bowl. It is only through such positive, thorough oiling as the Baker has that you can be assured of long life of the mill.

2. LEVERAGE ADVANTAGE. We use the Ratchet Arm principle, which gives our Baker Windmill a leverage advantage. This directly aids the mill in easily lifting the pump rod load with less power. If you had a load to lift, you would use a crowbar; the Baker Mill uses this principle.

3. GREATEST NUMBER OF WHEEL FANS. After long and thorough tests, we have produced a wheel which collects the maximum of power from the winds. Material was not sacrificed for price in the making of the Baker wheel, for the prices of the Baker are determined from actual costs and are not competitive. Our 8-foot wheel has an average of 250 square inches more sail surface than other wheels on the market. The Baker's small and numerous fans add to the efficiency and sturdiness of the wheel. In short, we have sacrificed nothing to make our wheels the best that can be offered.

4. EASILY ERECTED. It takes but one handyman to erect the Baker. The hub can be easily removed from the shaft. This makes possible the assembly of the wheel on the ground. Thus we save the erector, as far as possible, the unpleasantness of working at an altitude. The tension of our towers is taken care of at the factory.

5. CENTER LIFT PUMP ROD, equally distributing the load, eliminates side twists.

6. TWO GEARS AND TWO FINIONS, thus giving longer life and smoother action.

7. BALL BEARING TURNABLE enables the mill to hold itself in the face of the lightest winds.

8. SIMPLICITY OF DESIGN, few working parts—nothing to get out of order.

9. SELF-GOVERNING, AUTOMATICALLY throwing itself out of gear when the wind reaches a high velocity, thus protecting itself from destruction.

10. OIL ONLY ONCE A YEAR. Absolutely maintenanceless.

11. STURDY AND RIGID. The best of materials and workmanship are used.

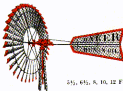
12. WILL FIT ANY MAKE TOWER. Many Baker heads are now running on other make towers. We manufacture ball bearing turntables for three-post towers and wood towers as well as for towers of various manufacturers. In ordering, specify style and make of tower on which you will erect the Baker Mill.

13. WILL NOT LEAK OIL.

14. A PERFECTED PRODUCT of over fifty years' experience.

15. BEARINGS. Cold Rolled Steel Shaft running on cast iron is recognized as being the most durable and trouble-free bearing in use. This is especially true if the bearings are constantly flooded with oil. This forms a thin film of oil between working parts. All bearings on the Baker Wind Engine are bathed in oil at all times.

BAKER RUN-IN-OIL WINDMILLS



OVER A
HALF CENTURY
OF SERVICE

4½, 6½, 8, 10, 12 Foot Slices

We have been manufacturers of Baker Windmills, Towers, Pumps and allied goods for a half century. Because of our long experience, we understand thoroughly the requirements of a perfectly constructed windmill. With our Baker Run-in-Oil Windmill, we conscientiously believe and know we are producing the best windmill it is possible to build.

Our engineers have worked out the most simple construction for a windmill. We have done away with all unnecessary parts which in time would prove troublesome. Only the very best of materials and highest class workmanship go into our Baker Windmills.

It has been our aim to produce a windmill that will pump water in the light breeze, giving an uninterrupted lifetime of service. We have been rewarded; the Baker Windmill having gained the enviable reputation as "the mill that runs when others are standing still." Hundreds of Baker Windmills erected 40 and 45 years ago are today still faithfully pumping water. Your investment in a Baker Windmill is assurance of a lifetime of economical, trouble-free water-pumping service. The only attention required and cost of operation is oiling once a year.

WARRANTY

Baker Wind Engines and Towers are constructed of good material in a first-class manner and warranted not to blow down in any wind that does not damage substantial structures in the immediate vicinity if properly erected and cared for; to run for one year on one oiling. Any part or parts found defective in material or workmanship within one year after erection will be replaced free of charge, f. o. b. our factory. A defect in any one article to affect purchase and price of that article only.

Baker Wheels



As the wind wheel collects the power from the wind, it is of primary importance. Pioneering experiments and years of study have been engineered into the Baker Wheel. Baker Wind Wheels have approximately double the number of wheel blades commonly used. We employ the small wheel blade, as it gives far greater efficiency and makes a much stronger wheel. It has been, and always will be our policy to manufacture a wind wheel capable of developing the utmost power from the breezes, and to this end we have sacrificed neither material nor quality. We offer greater wind surface and consequently more power. This scientifically constructed wheel, together with the extra large vane or rudder and the complete row Ball Bearing Turntable, have enabled us to design the Baker mill without a troublesome brake.

The accompanying illustration shows one section of our Baker 8-Foot Wheel. The 8-Foot Wheel has six wheel sections, six blades to the section (totaling 36 wheel blades). Each blade is securely double-clamped to the wheel rims. Extra heavy steel arms and strong angle braces are used to hold the wheel secure to the wheel hub. All parts are thoroughly and heavily galvanized.

Self-Governing Feature



One of the most valuable features of the Baker Mill is its self-governing ability. The Vane or Rudder is set slightly off center from the wheel, which allows the wheel and vane to fold together and turn edgewise to a wind of great velocity. The governing action is controlled by the strong steel spring of great resilience as illustrated. This governing action is true and positive, keeping the Baker Windmill in the teeth of the wind at all times. Its great value has been proven by a half century of use and success.

Removable Bearings



ing to be had.

The bearing is removable, allowing easy replacement. There is a constant flow of oil around the bearing. The oil enters bearing at "oil inlet," flowing to outer end of bearing, where it is caught by patented, positive oil stop and returned to oil bowl. Friction and wear are minimized, as all weight is carried by the thin film of oil which is always present between the shaft and bearing wall.

Turntable



Complete roller ball bearings running on cast chilled iron.

Truing Center



Held in position by sixteen bolts. Once installed, it absolutely squares the tower.

**Strong
Sturdy**

**Rigid
Durable**

Ladder Steps



Heavy galvanized steel steps. Securely fastened. Always safe.

Anchor Posts



Extra long anchor posts and heavy plates secure anchorage.



Windmill and Tower Specifications

The Turntable and Truing Center, together with bolts for same, are always supplied with the Mill.

Model of Mill	Size of Mill	Wheel Sections	Length Stroke	Wheel Blades	Shipping Weight	List Price	Code Word
5-5	5 1/2 ft.	4	4 1/2 "	20	225	\$41.50	Alban
6-6	6 1/2 ft.	4	5 "	24	285	\$48.00	Alban
8	8 ft.	6	6 "	30	370	\$63.00	Atlas
10	10 ft.	6	7 "	30	460	\$81.50	Atlas
12	12 ft.	8	8 "	32	735	\$118.00	Alway

Heavy Galvanized Four-Post Steel Towers

- No. 1 Towers—For 8-Foot Mills and smaller.
 No. 2 Towers—For 10-Foot Mills and smaller.
 No. 3 Towers—For 12-Foot Mills and smaller.

Tower Height Feet	No. 1 TOWERS			No. 2 TOWERS			No. 3 TOWERS		
	Weight Pounds	Code Word	List Price	Weight Pounds	Code Word	List Price	Weight Pounds	Code Word	List Price
15	290	Amelia	\$20.85	320	Angora	\$21.50	340	Apply	\$25.00
20	320	Janey	\$22.35	350	Amelia	\$24.50	375	Apply	\$28.25
25	370	Anna	\$24.80	385	Amelia	\$27.00	434	Apply	\$32.25
30	420	Amelia	\$27.30	445	Amelia	\$29.00	542	Apply	\$36.50
35	503	Amelia	\$34.75	525	Amelia	\$36.50	625	Apply	\$43.50
40	590	Amelia	\$43.25	610	Amelia	\$45.00	770	Amelia	\$55.75
45	.....	.....	.....	701	Amelia	\$53.00	895	Amelia	\$67.50
50	.....	.....	.....	842	Angora	\$55.00	1051	Amelia	\$80.25
60	.....	.....	.....	1087	Anna	\$72.50	1400	Amelia	\$107.25
70	.....	.....	.....	1310	Amelia	\$90.15	2041	Apply	\$132.75
80	.....	.....	.....	1680	Amelia	\$112.00	2691	Apply	\$170.25

Price includes anchor posts, anchor plates, wood pump rods, pulley lever, and wood platform, which are always shipped with the tower. In ordering, always give number of tower and height.

Galvanized Steel Towers

Heller-Aller Towers are extra well braced and banded, thus giving added strength and security. All tension is taken care of at our factory and so no adjustment or alignment is left to the erector who may be inexperienced. We use flat steel bands for braces, which once erected draw the tower firm and rigid. There is nothing to work loose or cause the tower to lose alignment.

Select a tower high enough to carry the mill 15 feet above all surrounding houses, barns, trees or wind obstructions within 500-foot radius. This permits a clean sweep of the wind from all directions to the mill, giving greatest efficiency. A high tower also protects the mill from damaging swirling winds coming off close surrounding objects.

THE HELLER-ALLER CO. NAPOLEON OHIO U.S.A.



MANUFACTURERS
THE HELLER-ALLER CO.—ESTABLISHED 1868—NAPOLEON, OHIO

TRADE MARK

BAKER

All Windfalls manufactured by The Heller-Aller Co. bear the trade mark "Baker," which is registered in the United States Patent Office and foreign countries. Broad patents cover all of our goods and are held exclusively for our use. Look for the tapering name "Baker," as shown above, on the vane or radder of your windmill, which is assurance of highest quality material and workmanship and superior design warranted and backed by our half century windmill manufacturing experience.

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